

Superfund Records Center

SITE: Yaworski

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**FIVE-YEAR REVIEW REPORT
TYPE Ia**

**YAWORSKI LAGOON SUPERFUND SITE
CANTERBURY, CONNECTICUT**

**PREPARED BY:
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I
BOSTON, MASSACHUSETTS**


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Date

INTRODUCTION

EPA Region I conducted this review pursuant to CERCLA section 121(c), NCP section 300.430(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991), and 9355.7-02A (July 26, 1994). This is a statutory review, the purpose of which is to ensure that a remedial action remains protective of human health and the environment. This review (Type Ia) is applicable to a site at which response is ongoing.

Pursuant to OSWER Directive 9355.7-02A, dated July 23, 1994, for an ongoing remedial action, it is not necessary to review ARARs, nor in most circumstances to recalculate the risk or perform a new risk assessment. This report therefore does not include a Standards Review section. If changes in ARARs necessitate further action, EPA may at any time implement such action through an Explanation of Significant Differences, ROD Amendment, or some other mechanism.

A statutory five-year review should be completed within five years of the initiation of the first remedial action, which in this case is 1990. This review was delayed, however, due to budgetary shortfalls in fiscal year 1996, as well as very significant changes in the status of Settling Defendants (see "Enforcement History").

SITE HISTORY

The Yaworski Lagoon Superfund Site (the "Site") is located on approximately five acres of land in Canterbury Township, Windham County, Connecticut. The Site is located within a meander bend of the Quinebaug River between Route 169 and Packer Road. The lagoon measures approximately 700 feet by 300 feet. From 1950 to 1973, industrial wastes including solvents, paints, textile dyes, acids, resins, and various other debris were dumped into the lagoon. Flammable waste was periodically burned at the Site until 1965 when the Connecticut Department of Health ordered a halt to on-site burning of waste. The combined efforts of local residents and state and local officials concerned about adverse human health and environmental effects from disposal operations at the Site led to the end of all dumping at the Site in 1973.

In 1976, the Connecticut Department of Environmental Protection (CT DEP) directed the Site owner, James Yaworski, to assess the environmental hazard posed by the Site. Mr. Yaworski was required to install monitoring wells adjacent to the lagoon, which detected contaminated groundwater. In 1980, CT DEP ordered Mr. Yaworski to employ a professional engineering firm to conduct an environmental study of the property. The firm concluded that most of the contaminants had migrated from the abandoned lagoon and recommended capping the area. In response to an order by CT DEP in 1982, Mr. Yaworski covered the Site with paper, rags, rubble, and soil.

After a fire occurred at the Site in 1982, EPA decided that additional information was needed about the Site to better assess the potential threat to human health and the environment. In 1984, EPA added the Site to the Superfund National Priorities List. The initial Remedial Investigation

(RI), completed in April 1986, concluded that several areas needed further study before a cleanup decision could be made. After completing a supplemental RI in 1987 and 1988, EPA signed a ROD in September 1988, formally selecting the cleanup method for the Site. The Consent Decree was signed in 1989.

The first portion of the remedy, a multi-layer cap and improvement of the dike surrounding the lagoon, was completed in late 1990 and approved by EPA in March 1992. The second portion consists of establishing Alternate Concentration Limits (ACLs) as the groundwater protection standard and monitoring groundwater, surface water, and sediment for 30 years. An ACL establishes a numerical limit on the amount of contamination that can exist in groundwater without endangering human health and the environment where receptors are potentially exposed. Monitoring wells were installed in late 1990 and 1991.

The ROD and the Consent Decree intended ACLs to be established within a short period of time. Monitoring would then take place to ensure that the ACLs were not violated. However, due to lack of information, the changing methodology for setting ACLs, and changes in the status of Settling Defendants, final ACLs have not been set at this time. Quarterly monitoring has taken place since March 1993 to collect data for the setting of ACLs and to ensure protection of human health and the environment.

No treatment of groundwater was initially required since the river was assumed to be a hydrogeological barrier to the movement of groundwater from the Site. However, data collected during Fall 1992 indicated an exceedance of Maximum Contaminant Levels (MCLs) for benzene across the river from the lagoon at monitoring well "Ni." Quarterly monitoring by Settling Defendants and/or sampling by EPA's oversight contractor have confirmed that the MCL exceedance has continued. Benzene levels have been found at levels ranging from 8 parts per billion (ppb) to 23 ppb. The MCL for benzene is 5 ppb.

EPA evaluated the benzene MCL exceedance along with all other Site conditions and determined that the levels did not pose an imminent threat. The potential exposure to the benzene exceedance currently exists through ingestion of groundwater only, and there are no known drinking water wells immediately downgradient of the benzene exceedance.

The Consent Decree states that a Corrective Action Program will be implemented within sixty days of written notice that EPA, in consultation with the Connecticut Department of Environmental Protection (CT DEP), determines that any of the conditions for ACLs is not being met, including that the river act as a hydraulic barrier to contamination from the Site. EPA made this determination in February 1993. The first step of the Corrective Action Program is for the potentially responsible parties (PRPs) to submit a Work Plan for Pre-Design activities. These activities will determine the extent of the contaminated plume through field investigations. Once this information is gathered, groundwater modeling and pilot testing will determine the measures necessary to prevent plume migration beyond well "Ni" and restore groundwater across the river to below MCLs. The Settling Defendants' contractors submitted plans for this work to EPA and CT DEP, however, no work plans were able to be finalized due to numerous changes in the status

of the Settling Defendants (see "Enforcement History"). In 1998, EPA's contractor Metcalf & Eddy (M&E) began working on Pre-Design activities. Field investigations were completed in September 1998, and it is expected that a final report and recommendations will be submitted to EPA in December 1998. Further, EPA's risk assessment staff are also reviewing monitoring data for the last 5 years, and will perform risk screenings to determine the need for further remedial action. EPA expects that this work will also be complete by December 1998, and that a decision regarding the need for future site work will be made in conjunction with CT DEP in early 1999. If EPA determines that future site work differs significantly from the ROD, EPA will produce an Explanation of Significant Differences or a ROD Amendment at that time.

EPA also continues to evaluate sampling results and overall Site conditions. MCL exceedances for additional compounds, an increase in the benzene exceedance concentrations, and/or other events at the Site, may require a re-evaluation of the situation in the future.

ENFORCEMENT HISTORY

In 1989, EPA entered into a Consent Decree with 11 Settling Defendants: Pervel Industries, Inc., generator of over 90% of the waste disposed in the lagoon; three settling parties that can collectively be referred to as the Yaworskis, owner/operators of the lagoon; five small generators, who collectively disposed of less than 3% of the waste in the lagoon; and two companies which are now bankrupt or defunct. The Consent Decree designated Pervel Industries, Inc. (Pervel), as responsible for performance of all work, and provided that the remaining parties would be liable for the work should Pervel become unable to perform.

Pervel's consultant, ENSR Consulting and Engineering (ENSR), began performing most of the site requirements, including developing ACLs. GZA Environmental began constructing the lagoon cap and improving the dike surrounding the lagoon in 1990. Most construction was completed by late 1990, and after certain other requirements were fulfilled, the cap was approved by EPA in March 1992. In March 1993, the Yaworskis' consultant, Fuss & O'Neill, Inc., began performing the required groundwater, surface water, and sediment monitoring and related work.

In late October 1993, after ENSR had submitted a number of draft Work Plans for Pre-Design activities related to the benzene exceedance, Pervel notified EPA that it was financially unable to perform the remaining work at the Site. ENSR subsequently ceased ongoing Site work. In accordance with the Consent Decree, EPA notified the remaining parties (the five small generators and the Yaworskis) that Pervel was unable to perform and that they were responsible for performing the remainder of the work at the Site.

EPA and the U.S. Department of Justice (DOJ) subsequently began investigations into the relationship between Pervel and its parent company, the Bemis Company (Bemis). In November 1996, EPA forwarded a cost recovery referral against Pervel and Bemis to DOJ. In December 1996, DOJ filed a complaint in court against Pervel and Bemis. As of September 1998, the discovery and document production period is ongoing, and nearing completion.

EPA and the five low volume generators entered into an agreement resolving their liabilities for the remaining work the site, under the 1990 consent decree, for payment of a sum certain. That agreement, memorialized in another (de minimis) consent agreement, was lodged with the court, and contested by the owners/operators. The agreement was ultimately approved by the court in July 1996.

The Yaworskis' contractor continued to conduct required quarterly monitoring after Pervel ceased Site work. EPA negotiated an agreement with the Yaworskis, which was finalized September 1995, in which the Yaworskis agreed to finalize the ACL Demonstration Report and determine ACLs, conduct Pre-Design investigations, and continue quarterly compliance monitoring until Pre-Design investigations are complete. The Yaworskis' contractor developed a work plan for Pre-Design investigations in 1996. This work plan was never finalized, however, and in October of 1996, the Yaworskis notified EPA that they could no longer continue financing any cleanup activities at the Site.

In December 1996, EPA formally took over all cleanup activities at the Site, except for Operations and Maintenance of the lagoon cap, which CT DEP is now performing. EPA and DOJ subsequently began investigations into the Yaworskis' finances, which is ongoing.

REMEDIAL OBJECTIVES & REMEDIAL ACTIONS

As outlined above, the first portion of the remedy consists of a multi-layer cap and improvement of the dike surrounding the lagoon. This work was completed in late 1990 and approved by EPA in March 1992. As part of the decision in December 1996 to change the Site from PRP-lead to Fund-lead, it was determined that the cap portion of the remedy was in the Operation and Maintenance phase. CT DEP agreed to take over 100% of this work, and has been performing all maintenance activities, including monthly inspections of the cap and fence, mowing the site approximately twice per year or as needed, tree and brush removal, repairs to the fence as needed, and re-seeding as needed.

The second portion of the remedy consists of establishing Alternate Concentration Limits (ACLs) as the groundwater protection standard and monitoring groundwater, surface water, and sediment for 30 years. Lack of adequate groundwater characterization required the installation of additional monitoring wells in 1990 and 1991. After extensive discussions, EPA, CT DEP and the PRPs finalized the methodology by which ACLs would be set at the site for a specific set of compounds. It was determined that two years of monitoring data would be collected, and the PRPs would conduct a statistical analysis to determine the appropriate ACLs. These ACLs would apply to three groundwater monitoring locations at the lagoon, the "B," "C," and "G" well clusters (see Attachment A).

The 1989 Consent Decree states that protectiveness shall be ensured by maintaining the following conditions:

- 1) At the point of compliance (monitoring wells located immediately adjacent to the lagoon), ACLs shall not be exceeded.
- 2) At the point of exposure (the Quinebaug River), the concentration of hazardous constituents shall not pose a risk to human health and the environment.
- 3) The Quinebaug River shall be maintained as a hydraulic barrier to contaminated groundwater.
- 4) The Quinebaug River shall not be adversely impacted by the discharge of contaminants into it.

To ensure that the river is not adversely impacted by discharge of contaminants, and to monitor points of exposure in the river for risk to human health and the environment, the PRPs conducted human health and ecological risk assessments as part of the ACL determination. These risk assessments generated Protective Concentration Limits (PCLs) for surface water, sediments, and pore water. Exceedances of PCLs for any specific contaminant at any one location triggers an evaluation of this contaminant in the surrounding area. The need for evaluation of the overall area is based on the possibility that contaminants could move downstream from upriver sources. To date, although there have been individual PCL exceedances in all media, EPA evaluations of these exceedances have not resulted in a determination that remedial action is warranted.

To ensure that the river acts as a hydraulic barrier to groundwater flow, monitoring well clusters across the river from the Site are monitored for Maximum Contaminant Levels (MCLs), or federal drinking water standards. The PRPs conducted Site-wide sampling in Fall 1992, and PRP results and EPA contractor split sampling results both indicated that the benzene MCL of 5 parts per billion (ppb) was exceeded across the river from the lagoon at monitoring well "Ni." EPA determined February 1993 that this exceedance triggered the need for Corrective Action.

In March 1993, the PRPs began quarterly monitoring of groundwater, surface water and sediments for two purposes: (1) to collect data for the setting of ACLs, and (2) to ensure protection of human health and the environment. The PRPs' last quarterly monitoring event prior to Fund takeover was September 1996. EPA's contractor, Metcalf & Eddy (M&E), began quarterly monitoring in December 1996, and has continued monitoring. Quarterly monitoring by PRPs and/or M&E has confirmed that the MCL exceedance has continued at levels ranging from 8 ppb to 23 ppb.

In 1998, M&E began collecting data for Pre-Design activities to investigate the benzene exceedance. Field investigations included the installation and sampling of small-diameter wells to define the nature and extent of the contaminant plume. These investigations were completed in September 1998, and it is expected that a final report and recommendations will be submitted to EPA in December 1998. EPA's risk assessment staff are also conducting risk screenings based on the last 5 years of monitoring data to determine the need for further remedial action. EPA expects that an overall decision regarding the need for future site work will be made in conjunction with CT DEP in early 1999.

The Consent Decree also requires Settling Defendants to use reasonable efforts to obtain access to and groundwater use restrictions on three properties neighboring the Site. Groundwater use restrictions are required on all wells within 100 feet outside of the river to the north, west and south, and restricts production wells greater than 50 gallons per minute within 1500 feet downgradient of the Site. EPA was never able to formally approve the ACL Demonstration Report without these groundwater use restrictions. Formal access agreements are required for the purposes of quarterly compliance monitoring and other Site activities, including investigations and potential response actions related to contamination at or near the Site.

Although monitoring wells were installed on the three properties neighboring the Site, and quarterly monitoring has taken place since March 1993, no formal agreement was reached among the landowners and the PRPs for 30 years of access and groundwater use restrictions. After Pervel defaulted on its Site obligations, the Bemis Company agreed to participate in discussions with EPA and the three landowners. Ultimately, Bemis' subsequent offers to the landowners were unsatisfactory and EPA arranged for the U.S. Army Corps of Engineers to perform appraisals on all three properties.

To date, two of the three landowners have accepted the appraised values for 30 years of groundwater use restrictions and access. Discussions with the third landowner are ongoing, and if the appraised value is not accepted, EPA will consider other enforcement options. EPA received approval from Headquarters to directly pay the landowners for access and groundwater use restrictions. EPA is currently working with CT DEP to draft formal easements for the properties pursuant to Connecticut's Environmental Land Use Restrictions regulations.

AREAS OF NONCOMPLIANCE and RECOMMENDATIONS

The ROD and the Consent Decree intended for ACLs to be established within a short period of time. Lack of adequate groundwater characterization necessitated the installation of additional monitoring wells. As there is no one required method to set ACLs, EPA had extensive discussions with the PRPs on various methodologies to use. After a decision was made on the methodology, the ACL portion of the remedy was significantly delayed by Pervel's default. Extensive negotiations were required to formalize an agreement with the remaining PRPs, the Yaworskis, to perform this work, then the Yaworskis also notified EPA of their inability to continue financing Site work.

Despite the fact that ACLs were never set, quarterly monitoring has taken place since March 1993 without interruption. When EPA took over all site work in December 1996, EPA prioritized the funding of the quarterly monitoring to ensure protection of human health and the environment.

Eventually EPA was able to secure funding for Pre-Design activities to investigate the benzene exceedance, and a final report is expected in December 1998. At that time, human health and ecological risk staff will have completed risk screening evaluations to determine the need for

additional site work. EPA expects to make a decision regarding the overall remedy for the Site in early 1999, which will consider all aspects of the remedy (ACLs, monitoring, and the potential need for groundwater treatment). If the decision differs significantly from the ROD, EPA will produce an Explanation of Significant Differences or a ROD Amendment at that time.

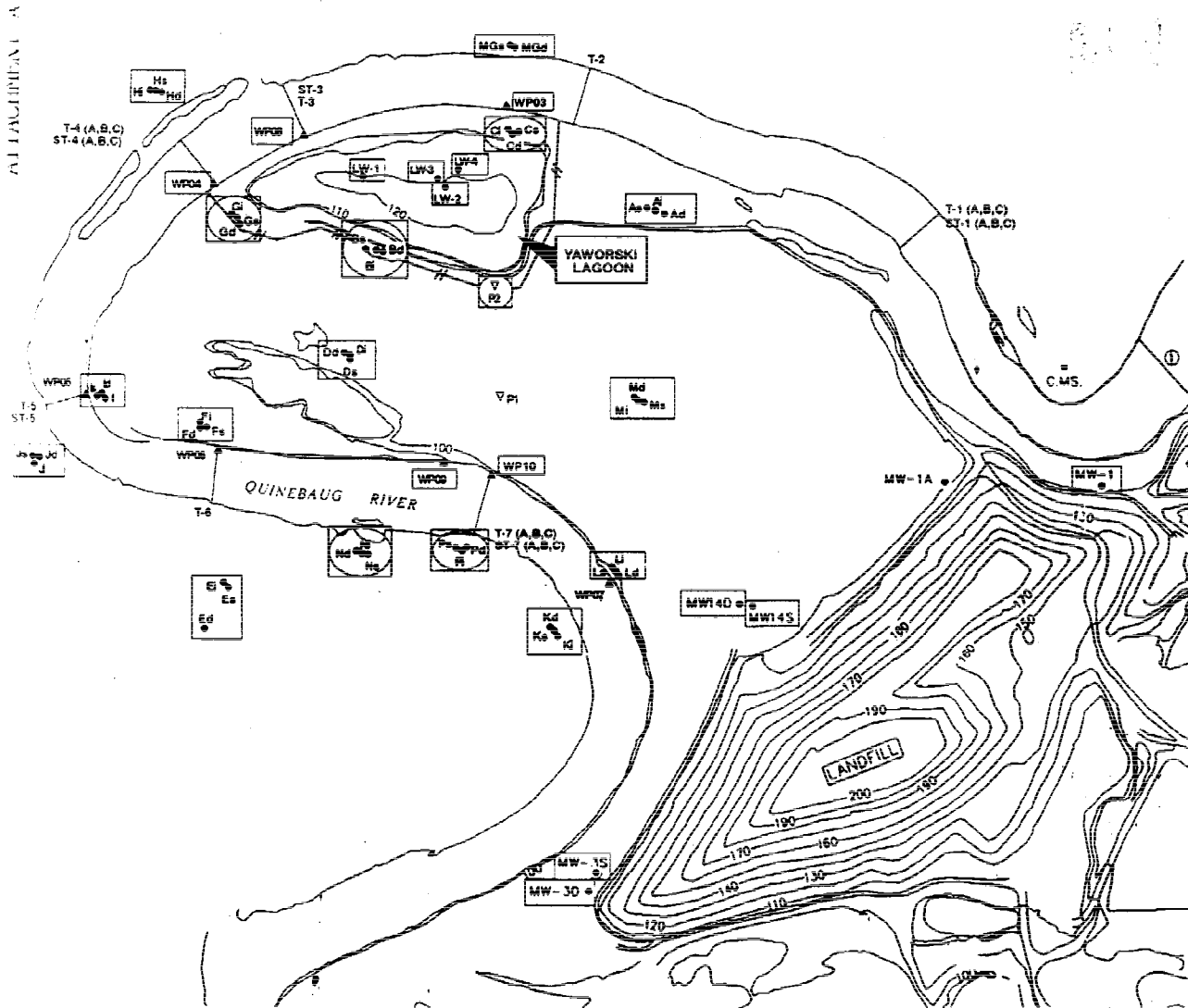
EPA expects that groundwater use restrictions and access to the three properties across the river will continue to be a significant part of any remedy at the Site. EPA continues to work with CT DEP on formal easements for the properties. A number of requirements pursuant to Connecticut's Environmental Land Use Restrictions regulations are proving problematic, the most serious of which involves the need to obtain subordination agreements from banks holding mortgages on the properties in question. One bank holds mortgages on two of the three landowner properties, and EPA has been discussing this requirement with the bank since March 1998. If the bank ultimately decides not to provide subordination agreements, EPA and CT DEP have determined that placing easements on the properties will not be possible, and other enforcement options, such as takings, will have to be considered.

STATEMENT ON PROTECTIVENESS

EPA certifies that the remedy selected for this site remains protective of human health and the environment.

NEXT FIVE-YEAR REVIEW

The next five-year review will be conducted by September, 2003.



LEGEND	
● A1	MONITORING WELL
▽ P1	PIEZOMETER
▲ WP03	WELL POINT
— T-1	RIVER TRANSECT
— ST-1	SEDIMENT TRANSECT
—	CHAIN-LINK FENCE
○	WELLS SAMPLED
□	WELLS AND WELL POINTS IN WHICH WATER LEVELS WERE MEASURED

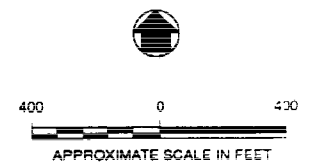


FIGURE 2-1.
GROUNDWATER MONITORING LOCATIONS
AT YAWORSKI LAGOON SUPERFUND SITE
DECEMBER 1997 (20th) QMR